force and while maintaining that force, start the engine. If brake pedal does not fall slightly under force when the engine starts, there is a malfunction in the power assist system.

§ 570.7 Steering systems.

(a) *System play.* Lash or free play in the steering system shall not exceed values shown in Table 1.

(1) *Inspection procedure.* With the engine on and the wheels in the straight ahead position, turn the steering wheel in one direction until there is a perceptible movement of a front wheel. If a point on the steering wheel rim moves more than the value shown in Table 1 before perceptible return movement of the wheel under observation, there is excessive lash or free play in the steering system.

TABLE 1—STEERING SYSTEM FREE PLAY VALUES

Steering wheel diameter (inches)	Lash (inches)
16 or less	2
18	2¼
20	2½
22	2¾

(b) *Linkage play.* Free play in the steering linkage shall not exceed one-quarter of an inch.

(1) *Inspection procedure.* Elevate the front end of the vehicle to load the ball joints. Insure that wheel bearings are correctly adjusted. Grasp the front and rear of a tire and attempt to turn the tire and wheel assembly left and right. If the free movement at the front or rear tread of the tire exceeds one-quarter inch there is excessive steering linkage play.

(c) *Free turning.* Steering wheels shall turn freely through the limit of travel in both directions.

(1) *Inspection procedure.* Turn off steering wheel through the limit of travel in both directions. Feel for binding or jamming in the steering gear mechanism.

(d) *Alignment.* Toe-in and toe-out measurements shall not be greater than 1.5 times the value listed in the vehicle manufacturer's service specification for alignment setting.

(1) *Inspection procedure.* Verify that toe-in or toe-out is not greater than 1.5 times the values listed in the vehicle manufacturer's service specification for alignment settings as measured by a bar-type scuff gauge or other toe-in measuring device. Values to convert toe-in readings in inches to scuff gauge readings in ft/mi side-slip for different wheel sizes are provided in Table I. Tire diameters used in computing scuff gauge readings are based on the average maximum tire dimensions of grown tires in service for typical wheel and tire assemblies.

TABLE I—TOE-IN SETTINGS FROM VEHICLE MFR'S SERVICE SPECIFICATIONS

Wheel size (inches)	Nominal tire diameter (inches)	Readings in feet per mile sideslip								
		1/16 in	1/8 in	3/16 in	1/4 in	5/16 in	3/8 in	7/16 in	1/2 in	9/16 in
13	25.2	13.1	26.2	39.3	52.4	65.5	78.6	91.7	104.8	117.9
14	26.4	12.5	25.0	37.5	50.0	62.5	75.0	87.5	100.0	112.5
15	28.5	11.5	23.0	34.5	46.0	57.5	69.0	80.5	92.0	103.5
16	35.6	9.3	18.6	27.9	37.2	46.5	55.8	65.1	74.4	83.7

(e) *Power steering system.* The power steering system shall not have cracked or slipping belts, or insufficient fluid in the reservoir.

(1) *Inspection procedure.* Examine fluid reservoir and pump belts for conditions indicated.

[38 FR 23950, Sept. 5, 1973, as amended at 39 FR 12868, Apr. 9, 1974]

§ 570.8 Suspension systems.

(a) *Suspension condition.* Ball joint seals shall not be cut or cracked. Structural parts shall not be bent or damaged. Stabilizer bars shall be connected. Springs shall not be broken, or extended above the vehicle manufacturer's design height. Spacers, if installed, shall be installed on both front springs, both rear springs, or on all

four springs. Shock absorber mountings, shackles, and U-bolts shall be securely attached. Rubber bushings shall not be cracked, extruded out from or missing from suspension joints. Radius rods shall not be missing or damaged.

(1) *Inspection procedure.* Examine front and rear end suspension parts for conditions indicated.

(b) *Shock absorber condition.* There shall be no oil on the shock absorber housing attributable to leakage by the seal, and the vehicle shall not continue free rocking motion for more than two cycles.

(1) *Inspection procedure.* Examine shock absorbers for oil leaking from within, then with vehicle on a level surface, push down on one end of vehicle and release. Note number of cycles of free rocking motion. Repeat procedure at other end of vehicle.

[38 FR 23950, Sept. 5, 1973, as amended at 44 FR 68470, Nov. 29, 1979]

§ 570.9 Tires.

(a) *Tread depth.* The tread on each tire shall be not less than two thirty-seconds of an inch deep.

(1) *Inspection procedure.* Passenger car tires have tread depth indicators that become exposed when tread depth is less than two thirty-seconds of an inch. Inspect for indicators in any two adjacent major grooves at three locations spaced approximately equally around the outside of the tire. For vehicles other than passenger cars, it may be necessary to measure tread depth with a tread gauge.

(b) *Type.* Vehicle shall be equipped with tires on the same axle that are matched in tire size designation, construction, and profile.

(1) *Inspection procedures.* Examine visually. A major mismatch in tire size designation, construction, and profile between tires on the same axle, or a major deviation from the size as recommended by the manufacturer (e.g., as indicated on the glove box placard on 1968 and later passenger cars) are causes for rejection.

(c) *General condition.* Tires shall be free from chunking, bumps, knots, or bulges evidencing cord, ply, or tread separation from the casing or other adjacent materials.

(1) *Inspection procedure.* Examine visually for conditions indicated.

(d) *Damage.* Tire cords or belting materials shall not be exposed, either to the naked eye or when cuts or abrasions on the tire are probed.

(1) *Inspection procedures.* Examine visually for conditions indicated, using a blunt instrument if necessary to probe cuts or abrasions.

[38 FR 23950, Sept. 5, 1973, as amended at 39 FR 12868, Apr. 9, 1974; 39 FR 19781, June 4, 1974]

§ 570.10 Wheel assemblies.

(a) *Wheel integrity.* A tire rim, wheel disc, or spider shall have no visible cracks, elongated bolt holes, or indication of repair by welding.

(1) *Inspection procedure.* Examine visually for conditions indicated.

(b) *Deformation.* The lateral and radial runout of each rim bead area shall not exceed one-eighth of an inch of total indicated runout.

(1) *Inspection procedure.* Using a runout indicator gauge, and a suitable stand, measure lateral and radial runout of rim bead through one full wheel revolution and note runout in excess of one-eighth of an inch.

(c) *Mounting.* All wheel nuts and bolts shall be in place and tight.

(1) *Inspection procedure.* Check wheel retention for conditions indicated.

[38 FR 23950, Sept. 5, 1973, as amended at 39 FR 12868, Apr. 9, 1974]

Subpart B—Vehicles With GVWR of More Than 10,000 Pounds

SOURCE: 39 FR 26027, July 16, 1974, unless otherwise noted.

§ 570.51 Scope.

This part specifies standards and procedures for the inspection of brake, steering and suspension systems, and tire and wheel assemblies, of motor vehicles in use with a gross vehicle weight rating of more than 10,000 pounds.

§ 570.52 Purpose.

The purpose of this part is to establish criteria for the inspection of motor vehicles through State inspection programs, in order to reduce deaths and